## REMARKS

Claims 1, 9, and 12 have been amended. Claims 1-15 are now pending in this application. Support for the amendments to the claims is found in the existing claims and the specification as discussed below. The specification has been amended at paragraph 0028 to correct two typographical errors. Accordingly, the amendments do not constitute the addition of new matter. Applicant respectfully requests the entry of the amendments and reconsideration of the application in view of the amendments and the following remarks.

**Personal interview**

Applicants' representative would like to thank Examiner Buttner for the helpful personal interview on April 1, 2004. A Summary of the Interview is provided on page 6 of this paper.

**Rejection under 35 U.S.C. § 103(a)**

Claims 1-15 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Tan (Macromolecules) or Tan (ACS Preprints) or CN 1257885 in view of Stevens '415.

The Office Action asserts that each of the primary references polymerize polycarbonate from carbon dioxide and propylene oxide. The catalyst is a combination of Yttriumtrihaloacetate, diethyl zinc, and glycerol. While these references lack ethylene or propylene carbonate, the Office Action posits that alkylene carbonates are by-products of the reaction and Stevens '415 teaches that these by-products can be recycled back into the feed. This recycling would result in the formation of the 4-part catalyst of Applicants' claims.

In response, the cited references do not teach formation of a catalyst. At best the cited combination of references provide a motivation to recycle alkylene carbonates. However, one of ordinary skill in the art would expect the recycled alkylene carbonate to act as a reactant, not as a catalyst.

Claim 1 has been amended to emphasize that the carbonate is present as a catalytic component. Claim 1 now recites that the catalyst is obtained by stirring or grinding the mixture, which includes the carbonate, and then aging the mixture for 1-24 hours under 0-50 times atmospheric pressure of nitrogen, argon, carbon dioxide or under super critical condition. Although the recycling process taught by Stevens may produce some mixing, there is no motivation provided in any of the references to age the recycled alkylene carbonate after combining with the 3-part catalyst of the Tan references. Aging is neither taught nor suggested by any of the cited references.

In order to provide evidence of the criticality of the aging step, Applicants provide the attached Declaration of Xiaojiang Zhao (Zhao Declaration).

Paragraph 2 of the Zhao Declaration compares to Example 1 on page 5 of the present specification to an experiment performed under the same conditions but without the aging step. All of the components and conditions are identical to Example 1 except that the catalyst was not aged. The data shows that both the yield and catalyst activity are lower than in Example 1 of the specification where the catalyst was aged for 12 hours. The catalyst activity in Example 1 is $8.04 \times 10^4$ g polymer / mol Nd compare to $6.03 \times 10^4$g polymer/ mol Nd in the comparative example of the Declaration. The yield is also better when the catalyst has been aged. Compare the yield of 60.3 g in Example 1 of the specification to a yield of 45.2 g in the Declaration.

Paragraph 3 of the Zhao Declaration compares Example 6 of the present specification to an experiment performed under the same conditions but without aging. All of the components and conditions are identical to Example 6 except that the catalyst was not aged. The data of the Declaration shows that both the yield and catalyst activity are lower in the absence of aging, than in Example 6 of the specification where the catalyst was aged for 12 hours. The catalyst activity in Example 6 is $7.44 \times 10^4$ g polymer/mol RE (rare earth metal) compared to $6.03 \times 10^4$ g polymer / mol RE in the Example of the Declaration. Yield is also higher when the catalyst is aged. Compare 55.8 g in Example 6 of the specification to 45.2 g in the data of paragraph 3 of the Declaration.

As set forth in the Declaration, the catalytic activity was increased by 20-30% by aging of the catalyst. These data show that aging of the catalyst has a significant effect upon the activity of the catalyst and upon the yield. If the carbonate was merely being recycled, one would not expect to see an effect from aging of the components. It is respectfully submitted that the presently claimed 4-part catalyst is patentable over the cited references. Accordingly, the combination of the primary references, alone or in combination, with Stevens, would not lead one of ordinary skill in the art to the invention as claimed.

Turning to claims 9-12, these claims are believed to be patentable as none of the cited references teaches a method of making a catalyst by sequentially adding a polyol, a rare-earth coordination compound, an alkyl metal compound and a carbonate followed by mixing/grinding and aging the mixture as claimed. The cited references do not teach or suggest the claimed method steps. Furthermore, if the benefits of the added carbonate could be achieved by mere

recycling, there would be no motivation to age the mixture for 1-24 hours under 0-50 times atmospheric pressure of nitrogen, argon, carbon dioxide or under super critical condition as claimed. As shown by the Zhao Declaration, aging of the catalyst is critical to obtaining improved yield and catalytic activity.

Regarding claims 12-15, these have been rewritten to follow through from claim 9 as suggested by the Examiner. As claim 9 is believed to be allowable for the reasons given above, it is respectfully submitted that claims 12-15 also should be in condition for allowance.

In view of Applicants' amendments, arguments and submitted Declaration, reconsideration and withdrawal of this ground of rejection is respectfully requested.

**CONCLUSION**

In view of Applicants' amendments to the claims and the foregoing Remarks, it is respectfully submitted that the present application is in condition for allowance. Should the Examiner have any remaining concerns which might prevent the prompt allowance of the application, the Examiner is respectfully invited to contact the undersigned at the telephone number appearing below.

Please charge any additional fees, including any fees for additional extension of time, or credit overpayment to Deposit Account No. 11-1410.

Respectfully submitted,

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Dated: April 29, 2004

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